

Translation

PATENT COOPERATION TREATY

PCT/JP2003/009769



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 903186	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/009769	International filing date (day/month/year) 31 July 2003 (31.07.2003)	Priority date (day/month/year) 28 October 2002 (28.10.2002)
International Patent Classification (IPC) or national classification and IPC H02K 19/36		
Applicant TOYOTA JIDOSHA KABUSHIKI KAISHA		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>

Date of submission of the demand 17 October 2003 (17.10.2003)	Date of completion of this report 04 August 2004 (04.08.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/009769

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

- These elements were available or furnished to this Authority in the following language _____ which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

 International application No.
 PCT/JP 03/09769

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-14	YES
	Claims		NO
Inventive step (IS)	Claims	4, 5, 11	YES
	Claims	1-3, 6-10, 12-14	NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims		NO

2. Citations and explanations

- Document 1: JP 63-202255 A (Mitsubishi Electric Corp.), 22 August 1988, page 4, upper left column, line 16 to lower right column, line 5
- Document 2: US 4232238 A (Hitachi, Ltd.), 04 November 1980, column 2, line 25 to column 4, line 42, & JP 54-118507 A
- Document 3: US 5742498 A (Nippondenso Co., Ltd.), 21 April 1998, column 7, line 5 to column 9, line 48, & JP 8-331818 A & JP 3458531 B2 & EP 751601 A2 & CN 1146656 A & KR 97/004234 A & KR 275658 B
- Document 4: US 5686780 A (Mitsubishi Denki Kabushiki Kaisha), 11 November 1997, column 1, line 11 to column 2, line 4, & JP 8-251889 A & TW 271018 A & CN 1133506 A & KR 216152 B1 & EP 731550 A1 & EP 731550 A2
- Document 5: JP 60-216752 A (Robert Bosch GmbH), 30 October 1985, page 2, lower left column, line 16 to page 3, upper right column, line 15, & DE 3411804 A & AU 8538103 A & BR 8501454 A & FR 2562008 A
- Document 6: JP 2001-268869 A (Mitsubishi Electric Corp.), 28 September 2001, column 9, lines 11-20, & US 2003/015928 A1 & US 6525438 B1

Claims 1, 2, 6, 8, 9 and 14

Document 3 discloses an alternating current generator for a vehicle, wherein a circuit comprising a switching element that has a three-phase bridge structure is provided to the end surface of the generator, and document 1 discloses a feature wherein an alternating current generator for a vehicle is integrated with an electric starter motor. Therefore, it would be easy for a person skilled in the art to configure so that a drive control device is provided to the end surface of the integrated electric starter motor/alternating current generator for a vehicle that is disclosed in document 1.

Claims 3, 10, 12 and 13

It would be easy for a person skilled in the art to apply the configuration for a voltage regulating circuit board that is disclosed in document 4, wherein power elements and the like for controlling the field current are mounted upon the ceramic substrate and are sealed by means of a resin, and the configuration that is disclosed in document 5, wherein a regulator is disposed in a U-shaped notched part, to a circuit board which controls an integrated electric starter motor/alternating current generator for a vehicle.

Claim 7

It would be easy for a person skilled in the art to apply the configuration that is disclosed in document 6, wherein the negative-side heat sinks, which are located further to the outside than the positive-side heat sinks, are disposed on the rotor side in relation to the positive-side heat sinks, to a circuit board which controls an integrated electric starter motor/alternating current generator for a vehicle.

Claims 4, 5 and 11

The documents that are cited in the international search report do not disclose a wiring pattern that is disposed so as to surround the axis of rotation that connects the control circuit and the multi-phase switching element; nor do they disclose a Zener diode that is disposed in the notched part of an electrode board. Furthermore, the features in question are not obvious to a person skilled in the art.